



Certificate
APR 24 2007
of Correction

10/771568

cafca

PTO/SB/21 (09-06)

Approved for use through 03/31/2007. OMB 0651-0031

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

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**TRANSMITTAL
FORM**

(to be used for all correspondence after initial filing)

Total Number of Pages in This Submission

Application Number	Patent#: 7,145,237
Filing Date	Issued: December 5, 2006
First Named Inventor	Nobuaki TERAGUCHI
Art Unit	2811
Examiner Name	N. Parekh
Attorney Docket Number	245402008300

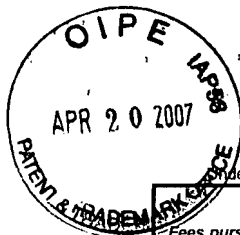
ENCLOSURES (Check all that apply)

<input checked="" type="checkbox"/> Fee Transmittal Form	<input type="checkbox"/> Drawing(s)	<input type="checkbox"/> After Allowance Communication to TC
<input type="checkbox"/> Fee Attached	<input type="checkbox"/> Licensing-related Papers	<input type="checkbox"/> Appeal Communication to Board of Appeals and Interferences
<input type="checkbox"/> Amendment/Reply	<input type="checkbox"/> Petition	<input type="checkbox"/> Appeal Communication to TC (Appeal Notice, Brief, Reply Brief)
<input type="checkbox"/> After Final	<input type="checkbox"/> Petition to Convert to a Provisional Application	<input type="checkbox"/> Proprietary Information
<input type="checkbox"/> Affidavits/declaration(s)	<input type="checkbox"/> Power of Attorney, Revocation Change of Correspondence Address	<input type="checkbox"/> Status Letter
<input type="checkbox"/> Extension of Time Request	<input type="checkbox"/> Terminal Disclaimer	<input checked="" type="checkbox"/> Other Enclosure(s) (please identify below):
<input type="checkbox"/> Express Abandonment Request	<input type="checkbox"/> Request for Refund	Petition Fee Transmittal (1 page)
<input type="checkbox"/> Information Disclosure Statement	<input type="checkbox"/> CD, Number of CD(s) _____	Request to Correct Assignee's Name (2 pages)
<input type="checkbox"/> Certified Copy of Priority Document(s)	<input type="checkbox"/> Landscape Table on CD	Request Certificate of Correction (2 pages)
<input type="checkbox"/> Reply to Missing Parts/Incomplete Application		Certificate of Correction (1 page)
<input type="checkbox"/> Reply to Missing Parts under 37 CFR 1.52 or 1.53		Marked-up Letters Patent (1 page)
		Change of Correspondence Address (1 page)
		Return Receipt Postcard
<div>Remarks</div>		

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm Name	MORRISON & FOERSTER LLP		
Signature			
Printed name	Barry E. Bretschneider		
Date	April 20, 2007	Reg. No.	28,055

APR 24 2007



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Effective on 12/08/2004. Fees pursuant to the Consolidated Appropriations Act, 2005 (H.R. 4818).		Complete if Known	
FEE TRANSMITTAL For FY 2007		Application Number	Patent#: 7,145,237
		Filing Date	Issued: December 5, 2006
		First Named Inventor	Nobuaki TERAGUCHI
		Examiner Name	N. Parekh
		Art Unit	2811
<input type="checkbox"/> Applicant claims small entity status. See 37 CFR 1.27		Attorney Docket No.	245402008300
TOTAL AMOUNT OF PAYMENT		(\$)	100.00

METHOD OF PAYMENT (check all that apply)

☐ Check ☐ Credit Card ☐ Money Order ☐ None ☐ Other (please identify): _____

☒ Deposit Account Deposit Account Number: 03-1952 Deposit Account Name: Morrison & Foerster LLP

For the above-identified deposit account, the Director is hereby authorized to: (check all that apply)

☒ Charge fee(s) indicated below ☐ Charge fee(s) indicated below, **except for the filing fee**

☐ Charge any additional fee(s) or underpayments of fee(s) under 37 CFR 1.16 and 1.17 ☒ Credit any overpayments

FEE CALCULATION

1. BASIC FILING, SEARCH, AND EXAMINATION FEES

Application Type	FILING FEES		SEARCH FEES		EXAMINATION FEES		Fees Paid (\$)
	Fee (\$)	Small Entity Fee (\$)	Fee (\$)	Small Entity Fee (\$)	Fee (\$)	Small Entity Fee (\$)	
Utility	300	150	500	250	200	100	
Design	200	100	100	50	130	65	
Plant	200	100	300	150	160	80	
Reissue	300	150	500	250	600	300	
Provisional	200	100	0	0	0	0	

2. EXCESS CLAIM FEES

Fee Description	Fee (\$)	Small Entity Fee (\$)
Each claim over 20 (including Reissues)	50	25
Each independent claim over 3 (including Reissues)	200	100
Multiple dependent claims	360	180

Total Claims **Extra Claims** **Fee (\$)** **Fee Paid (\$)**

HP = highest number of total claims paid for, if greater than 20.

Indep. Claims **Extra Claims** **Fee (\$)** **Fee Paid (\$)**

HP = highest number of independent claims paid for, if greater than 3.

3. APPLICATION SIZE FEE

If the specification and drawings exceed 100 sheets of paper (excluding electronically filed sequence or computer listings under 37 CFR 1.52(e)), the application size fee due is \$250 (\$125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).

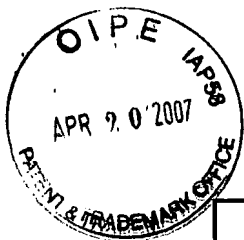
Total Sheets	Extra Sheets	Number of each additional 50 or fraction thereof	Fee (\$)	Fee Paid (\$)
_____	_____	_____ (round up to a whole number) x _____	_____	_____

4. OTHER FEE(S)

	Fees Paid (\$)
Non-English Specification, \$130 fee (no small entity discount)	
Other (e.g., late filing surcharge): 1811 Certificate of correction	100.00

SUBMITTED BY		Registration No.	28,055	Telephone	(703) 760-7743
Signature		(Attorney/Agent)		Date	April 20, 2007
Name (Print/Type)	Barry E. Bretschneider				

APR 24 2007



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PETITION FEE Under 37 CFR 1.17(f), (g) & (h) TRANSMITTAL (Fees are subject to annual revision) Send completed form to: MS Post Issue Commissioner for Patents P.O. Box 1450 Alexandria, VA 22313-1450	Application Number	Patent No. 7,145,237
	Filing Date	Issued: December 5, 2005
	First Named Inventor	Nobuaki TERAGUCHI
	Art Unit	2811
	Examiner Name	N. Parekh
	Attorney Docket Number	245402008300

Enclosed is a petition filed under 37 CFR 3.81(b) that requires a processing fee (37 CFR 1.17(f)), (g), or (h)). Payment of \$ 130.00 is enclosed.

This form should be included with the above-mentioned petition and faxed or mailed to the Office using the appropriate Mail Stop (e.g., Mail Stop Petition), if applicable. For transmittal of processing fees under 37 CFR 1.17(i), see form PTO/SB/17i.

Payment of Fees (small entity amounts are NOT available for the petition fees).

☒ The Commissioner is hereby authorized to charge the following fees to Deposit Account No. 03-1952 :

☒ Petition fee under 37 CFR 1.17(f), (g) or (h) ☒ Any deficiency of fees and credit of any overpayments

Enclose a duplicative copy of this form for fee processing.

☐ Check in the amount of \$ _____ is enclosed.

☐ Payment by credit card (Form PTO-2038 or equivalent enclosed). Do not provide credit card information on this form.

Petition Fees under 37 CFR 1.17(f): Fee \$400 Fee Code 1462

For petitions filed under:

- § 1.53(e) – to accord a filing date.
- § 1.57(a) – to accord a filing date.
- § 1.182 – for decision on a question not specifically provided for.
- § 1.183 – to suspend the rules.
- § 1.378(e) – for reconsideration of decision on petition refusing to accept delayed payment of maintenance fee in an expired patent.
- § 1.741(b) – to accord a filing date to an application under § 1.740 for extension of a patent term.

Petition Fees under 37 CFR 1.17(g): Fee \$200 Fee Code 1463

For petitions filed under:

- § 1.12 – for access to an assignment record.
- § 1.14 – for access to an application.
- § 1.47 – for filing by other than all the inventors or a person not the inventor.
- § 1.59 – for expungement of information.
- § 1.103(a) – to suspend action in an application.
- § 1.136(b) – for review of a request for extension of time when the provisions of section 1.136(a) are not available.
- § 1.295 – for review of refusal to publish a statutory invention registration.
- § 1.296 – to withdraw a request for publication of a statutory invention registration filed on or after the date the notice of intent to publish issued.
- § 1.377 – for review of decision refusing to accept and record payment of a maintenance fee filed prior to expiration of a patent.
- § 1.550(c) – for patent owner requests for extension of time in ex parte reexamination proceedings.
- § 1.956 – for patent owner requests for extension of time in inter partes reexamination proceedings.
- § 5.12 – for expedited handling of a foreign filing license.
- § 5.15 – for changing the scope of a license.
- § 5.25 – for retroactive license.

Petition Fees under 37 CFR 1.17(h): Fee \$130 Fee Code 1464

For petitions filed under:

- § 1.19(g) – to request documents in a form other than that provided in this part.
- § 1.84 – for accepting color drawings or photographs.
- § 1.91 – for entry of a model or exhibit.
- § 1.102(d) – to make an application special.
- § 1.138(c) – to expressly abandon an application to avoid publication.
- § 1.313 – to withdraw an application from issue.
- § 1.314 – to defer issuance of a patent.

Signature

Barry E. Bretschneider
Typed or printed name

March 7, 2007
Date

28,055
Registration No., if applicable

APR 24 2007



Docket No.: 245402008300
(PATENT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Letters Patent of:
Nobuaki TERAGUCHI

Patent No.: 7,145,237

Issued: December 5, 2006

For: ELECTRODE EMPLOYING NITRIDE-BASED
SEMICONDUCTOR OF III-V GROUP
COMPOUND, AND PRODUCING METHOD
THEREOF

**REQUEST FOR CERTIFICATE OF CORRECTION
PURSUANT TO 37 CFR 1.323**

Attention: Certificate of Correction Branch
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

Upon reviewing the above-identified patent, Patentee noted a typographical error which should be corrected.

In the Assignee:

Please replace "Sharp Kabushiki Kaishi" with --Sharp Kabushiki Kaisha--

The error was found in the application as filed by applicant. Please charge our Deposit Account No. 03-1952 in the amount of \$100.00 covering the fee set forth in 37 CFR 1.20(a).

The error now sought to be corrected is an inadvertent typographical error the correction of which does not involve new matter or require reexamination.

04/23/2007 DEMMANU2 00000146 031952 7145237
01 FC:1011 100.00 DA

va-201768

APR 24 2007

Transmitted herewith is a proposed Certificate of Correction effecting such amendment. Patentee respectfully solicits the granting of the requested Certificate of Correction.

The Director is hereby authorized to charge any deficiency in the fees filed, asserted to be filed or which should have been filed herewith (or with any paper hereafter filed in this application by this firm) to our Deposit Account No. 03-1952, under Order No. 245402008300. A duplicate copy of this paper is enclosed.

Dated: April 20, 2007

Respectfully submitted,

By 

Barry E. Bretschneider

Registration No.: 28,055

MORRISON & FOERSTER LLP

1650 Tysons Blvd, Suite 300

McLean, Virginia 22102

(703) 760-7743



Docket No.: 245402008300
(PATENT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Letters Patent of:
Nobuaki TERAGUCHI

Patent No.: 7,145,237 B2

Issued: December 5, 2006

For: ELECTRODE EMPLOYING NITRIDE-BASED
SEMICONDUCTOR OF III-V GROUP
COMPOUND, AND PRODUCING METHOD
THEREOF

**PETITION TO CORRECT ASSIGNEE'S NAME
PURSUANT TO 37 CFR 3.81(b)**

MS PETITIONS
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Patentees respectfully request under 37 CFR 3.81(b) that the name of the assignee on the above referenced patent be corrected to reflect the names of the proper assignee, "Sharp Kabushiki Kaisha."

Patentees state the following:

(1) An assignment was submitted for recordation as set forth in 37 CFR 3.11 to Sharp Kabushiki Kaisha on February 3, 2004, before issuance of the patent. A copy of the Notice of Recordation of Assignment Document reflecting recordation of the assignment at Reel 014962 Frames 0645 on February 3, 2004, is attached hereto.

(2) The failure to include the correct assignee name on the Form PTOL-85B was
inadvertent.

04/23/2007 DEMMANU2 00000146 031952 7145237
02 FC:1464 130.00 DA

va-196360

APR 24 2007

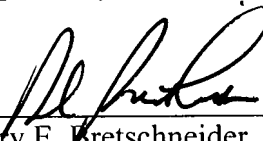
(3) The Commissioner is authorized to charge the processing fee set forth in 37 CFR 1.17(h) of \$130 for consideration of this Request to Deposit Account No. 03-1952, Ref. 245402008300. A Fee Transmittal sheet is attached in duplicate.

(4) Copies of the Request for Certificate of Correction filed on April 20, 2007, are also attached hereto.

Patentees respectfully request that the file of this patent be forwarded to the Certificates of Correction Branch for issuance of a Certificate of Correction should the Request be granted.

Dated: April 20, 2007

Respectfully submitted,

By 
Barry E. Bretschneider
Registration No.: 28,055
MORRISON & FOERSTER LLP
1650 Tysons Blvd, Suite 300
McLean, Virginia 22102
(703) 760-7743

**UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION**Page 1 of 1

PATENT NO. : 7,145,237
APPLICATION NO. : 10/771,566
ISSUE DATE : December 5, 2006
INVENTOR(S) : Nobuaki TERAGUCHI

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

In the Assignee:

Please replace "Sharp Kabushiki Kaishi" with --Sharp Kabushiki Kaisha--

MAILING ADDRESS OF SENDER (Please do not use customer number below):

Barry E. Bretschneider
MORRISON & FOERSTER LLP
1650 Tysons Blvd, Suite 300
McLean, Virginia 22102

1

va-201772



US007145237B2

(12) **United States Patent**
Teraguchi

(10) **Patent No.:** **US 7,145,237 B2**
(45) **Date of Patent:** **Dec. 5, 2006**

(54) **ELECTRODE EMPLOYING NITRIDE-BASED SEMICONDUCTOR OF III-V GROUP COMPOUND, AND PRODUCING METHOD THEREOF**

(75) Inventor: **Nobuaki Teraguchi**, Oji-cho (JP)

(73) Assignee: **Sharp Kabushiki Kaisha**, Osaka (JP)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: **10/771,566**

(22) Filed: **Feb. 3, 2004**

(65) **Prior Publication Data**
US 2004/0164415 A1 Aug. 26, 2004

(30) **Foreign Application Priority Data**
Feb. 25, 2003 (JP) 2003-047701

(51) Int. Cl.
H01L 23/48 (2006.01)
H01L 23/52 (2006.01)
H01L 29/40 (2006.01)
(52) U.S. Cl. **257/745; 257/734; 257/744**
(58) Field of Classification Search **257/745, 257/734, 744**

See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

4,289,822 A * 9/1981 Shimada et al. 428/212
6,479,836 B1 * 11/2002 Suzuki et al. 257/15
6,693,352 B1 * 2/2004 Huang et al. 257/743
2003/0196692 A1 * 10/2003 Koyanagi et al. 136/263
2003/0230970 A1 * 12/2003 Steckl et al. 313/498

FOREIGN PATENT DOCUMENTS

JP 5-291621 5/1993

OTHER PUBLICATIONS

Ruvimov, S. et al. (1998). "Microstructure of Ti/Al Ohmic Contacts for n-AlGaIn," *Appl. Phys. Lett.* 73(18):2582-2584.

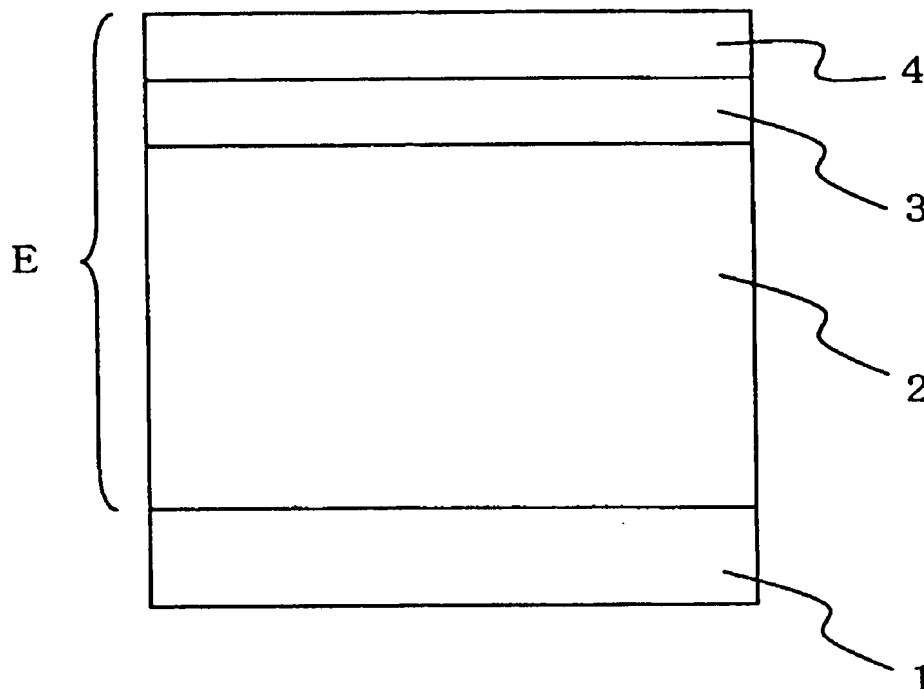
* cited by examiner

Primary Examiner—Nitin Parekh
(74) *Attorney, Agent, or Firm*—Morrison & Foerster LLP

(57) **ABSTRACT**

An electrode employing a nitride-based semiconductor of III-V group compound having a favorable ohmic characteristic and a producing method thereof are provided. The electrode includes a nitride-based semiconductor layer of III-V group compound, an electrode metal, and a metal oxide inserted therebetween. The metal oxide is preferably an oxide of metal element(s) permitting formation of a nitride semiconductor.

2 Claims, 4 Drawing Sheets



2 4 2007



PTO/SB/123 (01-06)

Approved for use through 12/31/2008. OMB 0651-0035

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

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CHANGE OF CORRESPONDENCE ADDRESS <i>Patent</i>		
Address to: MS Post Issue Commissioner for Patents P.O. Box 1450 Alexandria, VA 22313-1450	Patent Number	7,145,237
	Issue Date	December 5, 2006
	Application Number	10/771,566
	Filing Date	February 3, 2004
	First Named Inventor	Nobuaki TERAGUCHI
	Attorney Docket Number	245402008300

Please change the Correspondence Address for the above-identified patent to:

☒ The address associated with Customer Number:
OR

☐ Firm or
Individual Name

Address

City	State	ZIP
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Country

Telephone	Email
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This form cannot be used to change the data associated with a Customer Number. To change the data associated with an existing Customer Number use "Request for Customer Number Data Change" (PTO/SB/124).

This form will not affect any "fee address" provided for the above-identified patent. To change a "fee address" use the "Fee Address Indication Form" (PTO/SB/47).

I am the:

- ☐ Patentee.
- ☐ Assignee of record of the entire interest. See 37 CFR 3.71.
Statement under 37 CFR 3.73(b) is enclosed. (Form PTO/SB/96).
- ☒ Attorney or agent of record. Registration Number

Signature

Typed or
Printed Name

Barry E. Bretschneider

Date

April 20, 2007

Telephone

(703) 760-7743

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below.

☐ *Total of forms are submitted.



UNITED STATES PATENT AND TRADEMARK OFFICE

UNDER SECRETARY OF COMMERCE FOR INTELLECTUAL PROPERTY AND
DIRECTOR OF THE UNITED STATES PATENT AND TRADEMARK OFFICE

AUGUST 09, 2004

PTAS



102667802A

MORRISON & FOERSTER LLP
ALAN S. HODES
755 PAGE MILL ROAD
PALO ALTO, CA 94304

AUG 17 2004

**UNITED STATES PATENT AND TRADEMARK OFFICE
NOTICE OF RECORDATION OF ASSIGNMENT DOCUMENT**

THE ENCLOSED DOCUMENT HAS BEEN RECORDED BY THE ASSIGNMENT DIVISION OF THE U.S. PATENT AND TRADEMARK OFFICE. A COMPLETE MICROFILM COPY IS AVAILABLE AT THE ASSIGNMENT SEARCH ROOM ON THE REEL AND FRAME NUMBER REFERENCED BELOW.

PLEASE REVIEW ALL INFORMATION CONTAINED ON THIS NOTICE. THE INFORMATION CONTAINED ON THIS RECORDATION NOTICE REFLECTS THE DATA PRESENT IN THE PATENT AND TRADEMARK ASSIGNMENT SYSTEM. IF YOU SHOULD FIND ANY ERRORS OR HAVE QUESTIONS CONCERNING THIS NOTICE, YOU MAY CONTACT THE EMPLOYEE WHOSE NAME APPEARS ON THIS NOTICE AT 703-308-9723. PLEASE SEND REQUEST FOR CORRECTION TO: U.S. PATENT AND TRADEMARK OFFICE, ASSIGNMENT DIVISION, BOX ASSIGNMENTS, CG-4, 1213 JEFFERSON DAVIS HWY, SUITE 320, WASHINGTON, D.C. 20231.

RECORDATION DATE: 02/03/2004

REEL/FRAME: 014962/0645
NUMBER OF PAGES: 3

BRIEF: ASSIGNMENT OF ASSIGNOR'S INTEREST (SEE DOCUMENT FOR DETAILS).
DOCKET NUMBER: 245402008300

ASSIGNOR:

TERAGUCHI, NOBUAKI

DOC DATE: 12/18/2003

ASSIGNEE:

SHARP KABUSHIKI KAISHA
22-22, NAGAIKE-CHO, ABENO-KU
OSAKA, OSAKA-SHI, JAPAN

SERIAL NUMBER: 10771566

FILING DATE: 02/03/2004

PATENT NUMBER:

ISSUE DATE:

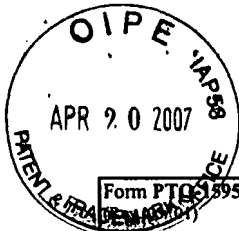
TITLE: ELECTRODE EMPLOYING NITRIDE-BASED SEMICONDUCTOR OF III-V GROUP COMPOUND, AND PRODUCING METHOD THEREOF

3 2 4 2007

014962/0645 PAGE 2

VIOLET MCCOY, EXAMINER
ASSIGNMENT DIVISION
OFFICE OF PUBLIC RECORDS

2 4 2007



02-12-2004

Form PTO-1595

OMB No. 0651-0027 (exp. 5/31/2002)

U.S. DEPARTMENT OF COMMERCE
U.S. Patent and Trademark Office

102667802

To the Honorable Commissioner of Patents and Trademarks, U.S. Patent and Trademark Office, Washington, DC 20503-0001
Attached original documents or copy thereof

1. Name of conveying party(ies):

Nobuaki TERAGUCHI

2-3-04

2. Name and address of receiving party(ies)

Name: SHARP KABUSHIKI KAISHA

Internal Address: _____

Street Address: _____

22-22, Nagaïke-cho, Abeno-ku
OsakaAdditional name(s) of conveying party(ies)
attached?☐ Yes ☒ No

3. Nature of Conveyance:

☒ Assignment☐ Merger☐ Security Agreement☐ Change of Name☐ Other _____

City: Osaka-shi

Country: Japan

Zip: _____

Execution Date: December 18, 2003

Additional name(s) &
address(es) attached:☐ Yes ☒ No

4. Application number(s) or patent number(s):

10771566

If this document is being filed together with a new application, the execution date of the new application is: December 18, 2003

A. Patent Application No.(s):

B. Patent No.(s):

Additional numbers attached? ☐ Yes ☒ No5. Name and address of party to whom correspondence
concerning document should be mailed:Name: Alan S. Hodes
MORRISON & FOERSTER LLP

Internal Address: Atty. Dkt.: 245402008300

Street Address:
755 Page Mill RoadCity:
Palo Alto

State: CA Zip: 94304

6. Total number of applications and
patents involved: 1

7. Total fee (37 CFR 3.41) \$ 40.00

☐ Enclosed☒ Authorized to be charged to deposit account☐ Authorized to be charged to credit card
(Form 2038 enclosed)

8. Deposit account number:

03-1952

(Attach duplicate copy of this page if paying by deposit account)

DO NOT USE THIS SPACE

9. Statement and signature.

To the best of my knowledge and belief, the foregoing information is true and correct and any attached copy
is a true copy of the original document.

Alan S. Hodes - 38,185

Name of Person Signing

Signature

February 3, 2004

Date

Total number of pages including cover sheet, attachments, and documents: 3

02/11/2004 LMUELLER 00000173 031952 10771566

01 FC:8021

40.00 DA

PA-856506

PR 2 4 2004